# City of Takoma Park, Maryland

Office of the City Arborist
Public Works Department
31 Oswego Avenue
Silver Spring, Maryland 20910
Tel: (301) 891-7612

## Tree Protection Plan Agreement

## PERMIT FEE: $25.00

DATE:_____

Contents:

Section I: Property Owner and Contractor Information

Section II: Tree Protection Plan Requirements

Section III: Requirements, Restrictions and Penalties for Non-Compliance

Section IV: Signatures of Property Owner, General Contractor and Arborist

Section V: Takoma Park Inspection Sheet

Bibliography/References

Definitions

Appendix

Prior to submitting the Tree Protection Plan to the City of Takoma Park, make sure the following items have been accomplished:

- Date entered on cover
- Check in the amount of $25.00 attached
- Provided project address (page 3)
- Provided property owner information (page 3)
- Provided all contractor information (page 3)
- Described project (page 3)
- Homeowner and contractor understand all items in checklist (pages 4 - 7)
- Read and understand penalties for non-compliance (page 8)
- Homeowner signed document (page 9)
- Contractor signed document (page 9)
- Provided address of all contiguous properties
- Made 2 copies of document; 1 for homeowner and 1 for contractor
- Attached site plans to document
- Shown on plans all relevant tree protection measures

**Section I:** **Property Owner and Contractor Information**
print all information legibly

A. Address of Proposed Project:_____

B. Property Owner Information

1. Property Owner's Name:_____

2. Property Owner's Address:_____

3. Property Owner's Daytime Phone Number:_____

C. General Contractor Information

1. Contractor's Name:_____

2. Contractor's Address:_____

3. Contractor's Phone Number:_____

4. Contractor's License Numbers:_____

D. Arborist Information

1. Arborist's Name:_____

2. Arborist's Address:_____

3. Arborist's Phone Number:_____

4. Arborist's Maryland Tree Expert License Number:_____

E. Proposed Project

1. Describe project and attach any applicable plans:

_____

_____

_____

City Use Only:

**Section II. Tree Protection Plan Requirements.** (Check all that apply; #1 and #2 are required on every application)

1. Critical Root Zones

☐ Critical root zones of trees shall be affected by the proposed construction and/or disturbances.

2. Tree Protection Fencing

☐ Tree protection fencing shall be erected to ensure that a majority of the critical root zone of each tree affected is left undisturbed by the construction. **The distance (in feet) between the base of the trees and the tree protection fencing is documented** on attached site drawings and shall not be moved for the duration of construction. The type of fencing erected is stated or attached to this plan.

NOTE: It is critical that all involved parties are aware of the location of the fences. Any movement of fences from prior agreed upon locations could result in a stop work order.

_____ Property owner initials

_____ Contractor initials

3. Signage

☐ Signs posted on the tree protection fences will be needed to explain the purpose of the fences and the need to keep them in place. An example of the signs needed is on page 14.

4. Equipment Usage

☐ All work shall be done by hand, and no heavy equipment, vehicles, etc. will be utilized on site. Using jackhammers is considered doing work by hand.

☐ Work shall be accomplished with heavy equipment and hand labor. Equipment to be used on site is noted on an attached sheet. No other equipment except that listed on this attachment shall be used on site.

NOTE: Any and all operators of heavy equipment, vehicles, etc. must understand that the tree protection fencing is there to protect the trees. It is the responsibility of the contractor to inform all operators and subcontractors

that they are not to damage, destroy, move, or alter the tree protection fences in any fashion.

5. Silt Fencing

☐ Silt fencing is required to minimize runoff onto the roots of the affected tree(s) and shall be installed on the uphill side of the tree protection fence. Indicate silt fence location on site plan.

6. Grade Changes

☐ Grade changes will occur on site. Indicate all grade changes on site plan, and indicate if changes are below or above grade and by how much.

7. Root Pruning

☐ Root pruning will be done because of excavation in or near the critical root zone(s) of the tree(s). A root pruner, vibratory plow, sharp stump grinder, or a shovel/ spade will be used. All root pruning will be done to a depth of 18 inches. All root pruning will occur before any excavation occurs. Indicate on the site plan where root pruning will occur and indicate below which root pruning method(s) will be used._____

_____

_____

_____ Property owner intials _____ Contractor initials

8. Tunneling

☐ Some work will be carried out by tunneling, moling, or directional boring at a minimum depth of 24 inches from the soil surface. The location of the proposed tunnel is on the attached plan.

9. Trenching

☐ Trenching shall be done within the critical root zone of the affected tree(s). Any roots over one-half (½) inch in diameter shall be cleanly pruned with a sharp lopper, or saw. The location of the proposed trench is on the attached plan. Root pruning will occur before any trenching takes place.

10. Root Protection/Soil Compaction

☐ Root protection to avoid damage from equipment, materials and vehicles is necessary at the job site. Mulching depths and fabric usage is detailed on an attached sheet or below. All areas identified as root protection areas to minimize soil compaction are shown on attached site plan. Materials used and depths at which they are used are explained below.

_____

_____

11. Soil Compaction Mitigation

☐ Vertical mulching shall be done by drilling holes 2 - 2 1/2 inches in diameter and 12 - 18 inches deep into the compacted soil. The holes will encompass the critical root zones of the affected trees and will be spaced 2 feet apart in a grid pattern. The holes will be filled with a porous material mixture such as leaf mulch, perlite, pea gravel, or vermiculite.

☐ Radial mulching/trenching will be done by making radial trenches, in a spoke pattern, around the tree. The trenches will have soil replacement done by using a mixture of topsoil, organic mixes, leaf mulch or vermiculite. The trenches will start at least four feet from the base of the tree, extend out at least 10 feet and be no closer than 5 feet from each other.

☐ An air spade will be used to remove the compacted soil. The soil will be replaced immediately with a highly organic soil mix.

12. Fertilization

☐ Because the trees will be under stress from construction, fertilization is required. It will be done with a slow release fertilizer and no less than 1 lb. of $N/1000^2$ and no more than 1.5 lb. of $N/1000^2$ will be used. If fertilization is done by a non-Licensed Tree Expert (MD), proof must be provided as to the rates of Nitrogen installed.

13. Watering Contingency

☐ Affected trees shall be watered during times of low rainfall (less than 1" of rain per 14 day period) twice per six day period, at four hours per event. The entire critical root zone of the tree(s) shall be watered with this prescription.

14. Pruning

☐ Pruning of dead wood will be done to specific trees on the property or nearby properties. The tree(s) are indicated on the attached plan or at the end of Section II.

☐ Because of the vertical profile of the construction project, some live tree limbs will be pruned. The affected tree(s) are indicated on the attached plan or at the end of Section II.

NOTE: All pruning shall be done by a Licensed Tree Expert with the State of Maryland.

15. Pest/Pathogen Control

☐ Any affected trees that experience an insect or disease infestation during the construction phase of the project shall be treated to control/eliminate the infestation at the property owner's expense. Treatment must be carried out by a Licensed Tree Expert and a Certified Pesticide Applicator with the State of Maryland.

16. Logistics

☐ Material will be stored on-site. The attached site plan shows where materials will be stored in relationship to the trees and the protection devices.

_____ Property owner initials _____ Contractor initials

17. Other

☐ Other protection measures to be taken are as follows (attach additional sheets if necessary):

_____

_____

_____

_____

_____

_____

Section III. Restrictions and penalties for non-compliance.

1. Violation of the provisions agreed to in this document may lead to job shutdown for a minimum of 24 hours, levying of Municipal Infractions under City Code No. 1995-5, or other penalties to the property owner, contractor, or both parties.

2. This Tree Protection Plan has been submitted to satisfy the requirements of the City's Tree Ordinance, No. 2000-17. Approval of this plan does not absolve the property owner, contractor, or other parties involved in the project from other permits or requirements which may be required, be they local, County, State, Federal, or other.

3. Any contract tree work must be conducted by a Tree Expert licensed in the State of Maryland. The license number ("LTE" designation) of the Tree Expert must be submitted to the City Arborist before the work begins.

4. All pruning must be done in accordance with the American National Standard for Tree Care Operations (ANSI A300 (Part 1) -2001 Pruning).

5. All tree work safety precautions must be done in accordance with the American National Standard for Tree Care Operations - Safety Requirements (ANSI Z133.1-1994).

6. All tree protection fencing, silt fencing, or other tree protection devices must be inspected and approved by the City's Arborist or designee three (3) working days prior to the start of construction.

7. Any modification of the plans and conditions submitted and agreed to in this document must be approved in writing by the City Arborist or designee a minimum of five (5) days before the modifications are enacted.

**Section IV.** **Signatures**

The following persons agree to abide by the conditions outlined in this Tree Protection Plan and all of its attachments.

**Property Owner's Printed Name & Signature:** _____

_____

**Date Signed:** _____

**Tree Contractor's Printed Name & Signature:** _____

_____

**Date Signed:** _____

**General Contractor's Printed Name & Signature:** _____

_____

_____

**Date Signed:** _____

**Addresses of all contiguous properties:**

_____

_____

_____

_____

_____

****If your application is accepted by the City Arborist, the contiguous neighbors (those properties that share a property line with yours) will be sent a letter informing them of the Tree Protection application and may comment on the application. The Tree Ordinance requires a 15-day period for those comments to be received.**

Section V. Inspection Sheet

For Official Use Only

Protection Plan: Approved _____ Signed _____

Denied _____ Signed _____

Property Posted from: _____ to _____

Additional information required:

_____

_____

_____

_____

_____

_____

Inspection dates and comments:

_____

_____

_____

_____

_____

**Bibliography**

Fazio, J.R., ed. 2000. How to Save Trees During Construction (No. 7). Tree City USA, National Arbor Day Foundation, 100 Arbor Avenue, Nebraska City, NE 68410. 8 p.

Harris, R.W., J.R. Clark, and N.P. Matheny. 1999. Arboriculture - Integrated Management of Landscape Trees, Shrubs, and Vines. Prentice Hall, Upper Saddle River, NJ 07458. 687 p.

Hartman, J.R.; T.P. Pirone; and M.A. Sall. 2000. Pirone's Tree Maintenance. Oxford University Press, New York, NY 10016. 545 p.

Houde, John 1997. "Public Property Tree Preservation," Journal of Arboriculture 23(2): 83-86.

Johnson, G.R. 1997. Tree Preservation During Construction: A Guide to Estimating Costs. University of Minnesota Extension Service, St. Paul, MN 55108. 17 p.

Johnson, G.R. 1999. Protecting Trees From Construction Damage. University of Minnesota Extension Service, St. Paul, MN 55108. 15 p.

Maryland Department of Natural Resources. October 30, 1990. Natural Design in Development...Development Potential Through Forest Conservation. Maryland Department of Natural Resources, Annapolis, MD.

Miller, F.D. and D. Neely 1993. "The Effect of Trenching on Growth and Plant Health of Selected Tree Species," Journal of Arboriculture 19(4): 226-229.

Randrup, Thomas B. 1997. "Soil Compaction on Construction Sites," Journal of Arboriculture. 23(5): 207-210.

**Definitions**

1. **Aeration** - The process in which holes are drilled into the soil within the critical root zone to provide relief from compaction. Holes typically are 10 to 12 inches deep, 2 ½ to 3 inches in diameter, and 2 to 3 feet on center. Using a pneumatic air spade can also provide aeration.

2. **ANSI** - American National Standards Institute. Produces standards for tree care practices (Z133.1), nursery stock (Z60.1), and pruning (A300), as well as for other industries.

3. **Arboriculture** - The science and art of caring for trees, shrubs and other woody plants in landscape settings.

4. **Caliper** - The diameter measurement of the trunk of nursery stock, taken at caliper height.

5. **Caliper Height** - The height above the ground at which the diameter measurement or "caliper" of nursery stock is measured. The caliper height of nursery stock trees means six (6) inches above the ground for trees less than four (4) inches in diameter and twelve (12) inches above the ground for trees four(4) inches or more in diameter.

6. **Canopy** - The combined crowns of all trees on a tract of land.

7. **Certified Arborist** - An individual who has fulfilled the requirements of the International Society of Arboriculture's (ISA) certification program.

8. **Certified Forester** - An individual who has fulfilled the requirements of the Society of American Forester's (SAF) certification program.

9. **Critical Root Zone** - The protection zone for an individual tree or an area defined by a circle with a diameter 24 to 36 times the DBH of a tree (or 1 to 1.5 feet of radius for each inch of DBH).

10. **Crown** - The section of a tree defined by the spread of the branches and foliage of a tree.

11. **Diameter at Breast Height** or **DBH** - The measurement of the average diameter of a tree taken at 4 ½ feet from the ground.

12. **Hardscape** - The pavement, buildings, irrigation systems, and other structural elements of a landscape.

13. **Licensed Tree Expert (LTE)** - The State of Maryland requires that all tree work done for hire, except for removals, shall be performed by a professional licensed with the state.

All Licensed Tree Experts must renew their license every year and prove adequate insurance.

14. **Root** - The part of a plant containing the woody and nonwoody tissues that absorb water, gases, and nutrients from the soil and atmosphere, as well as support the crown.

15. **Root Hairs** - Hairlike tubular outgrowth from near the tip of a rootlet, performing the work of absorption.

16. **Root Pruning** - The process by which roots are cut/pruned with a sharp instrument to induce lateral growth. Roots are typically pruned perpendicularly to growth direction to help compartmentalize the pruned area. Root pruning is done before any excavation and grade changes.

17. **Stress** - Unfavorable deviation from normal. The action on a body of any system of balanced forces whereby strain or deformation results. In arboriculture, the adverse alteration of tree health by abiotic or biotic factors.

18. **Urban Forest Tree** - Any tree in the City of Takoma Park that is at least 7 5/8 inches in diameter (DBH) and 6 inches in diameter in the historical district.

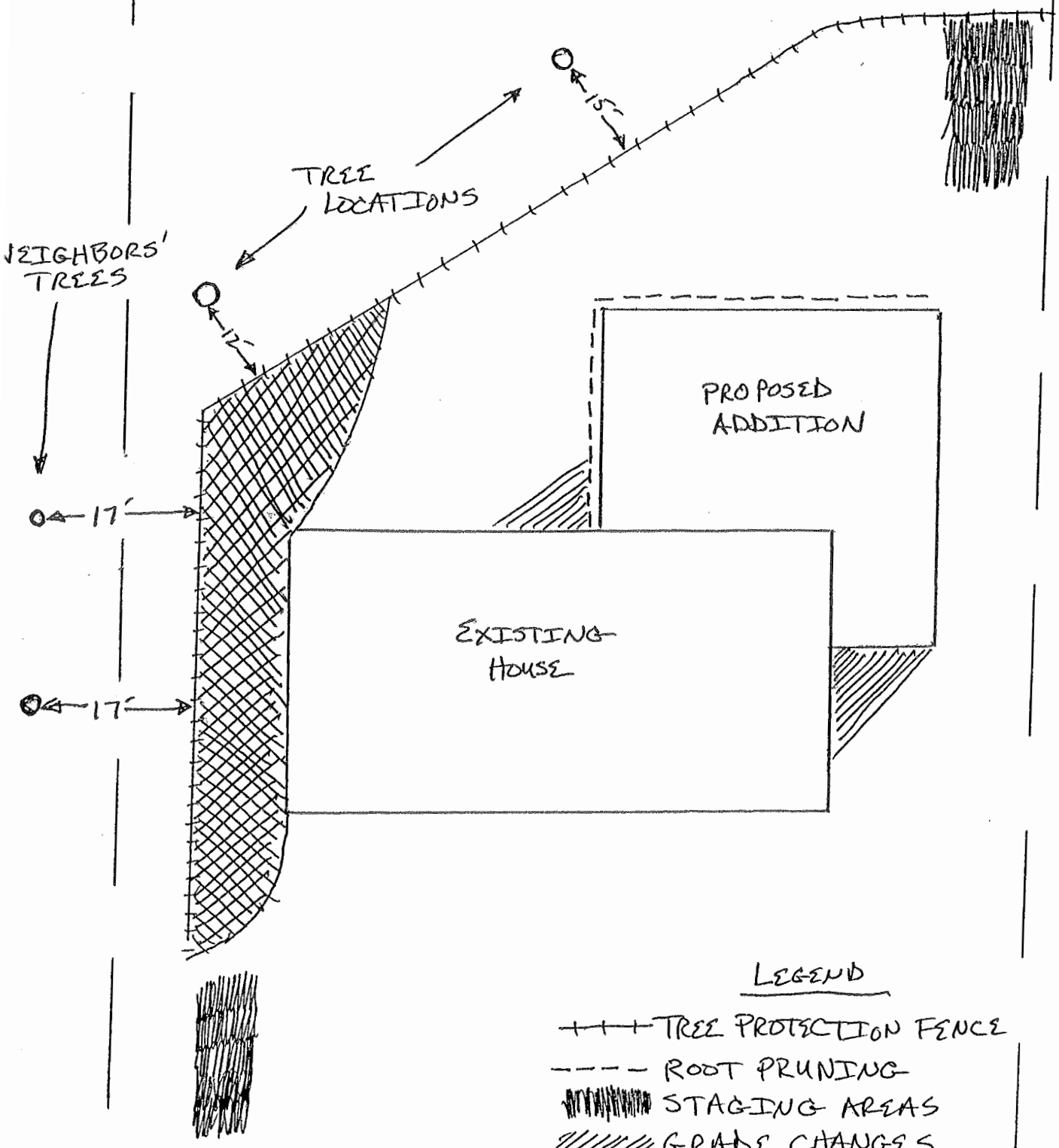
19. **Urban Forestry** - The management of naturally occurring and planted trees and shrubs in urban areas.

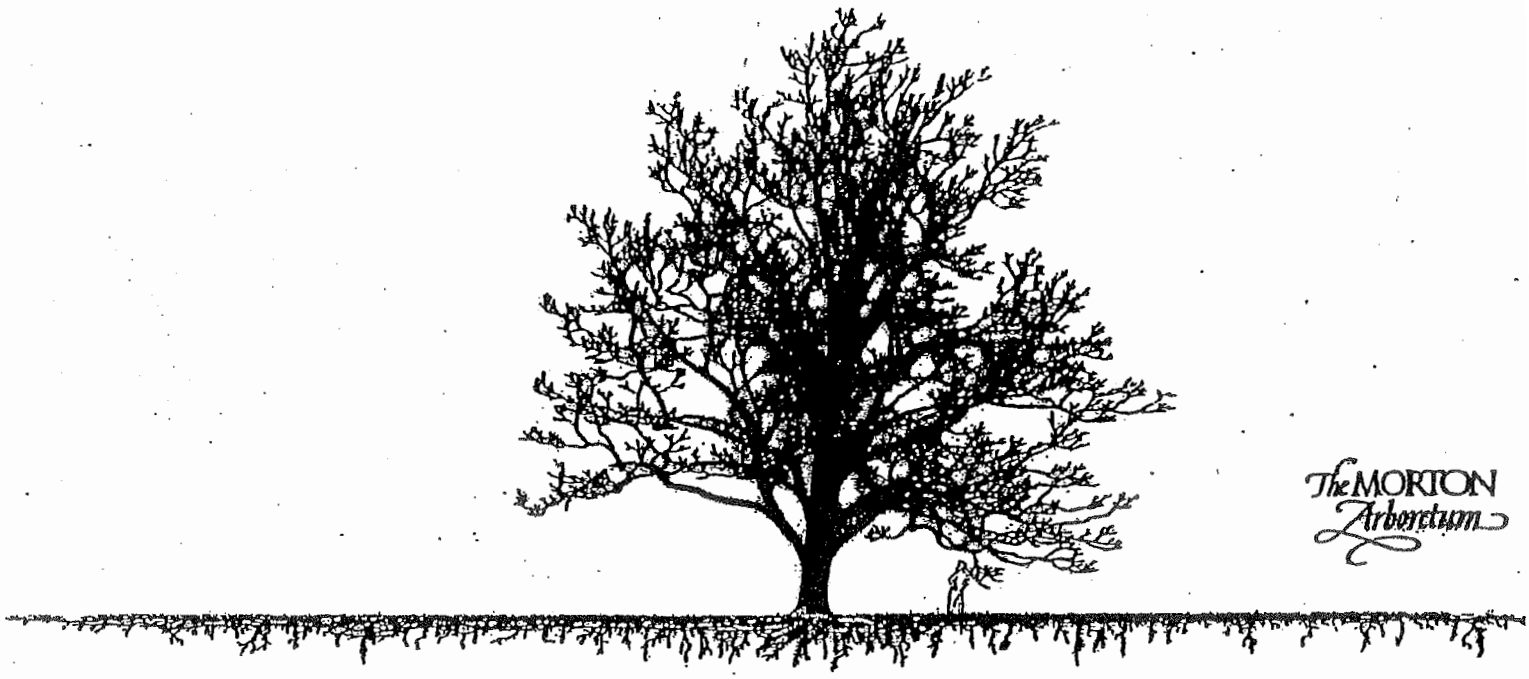
20. **Wound** - Any injury that induces a compartmentalization response.

# APPENDIX

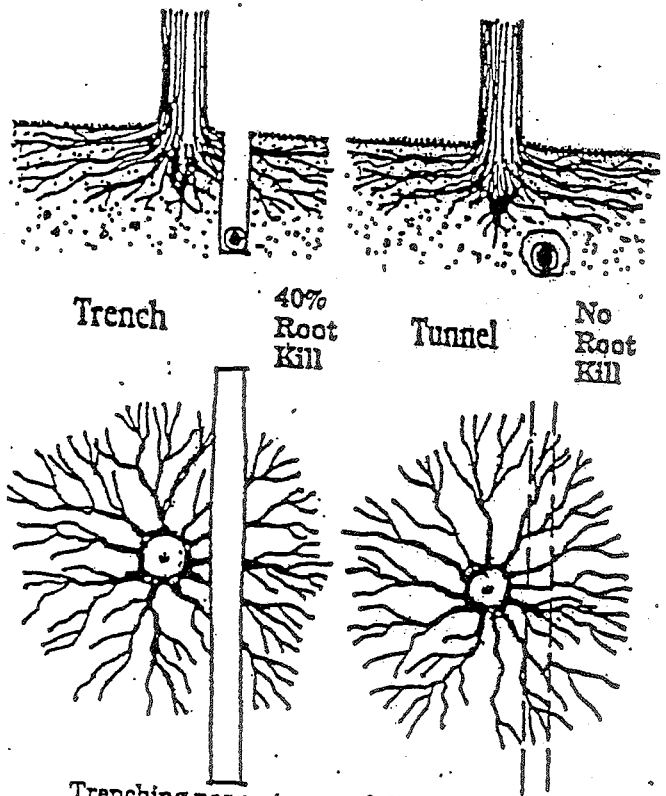

| | | |
|---|---|---|
| 1. | Site Plan Example | page 15 |
| 2. | Typical Root Zone | page 16 |
| 3. | Tunneling Information | page 17 |
| 4. | Trenching Information | page 18 |
| 5. | Pruning Information | page 19 |
| 6. | Sign Example | page 20 |

# SITE PLAN EXAMPLE




The MORTON
Arboretum

## How Tunneling Saves Trees

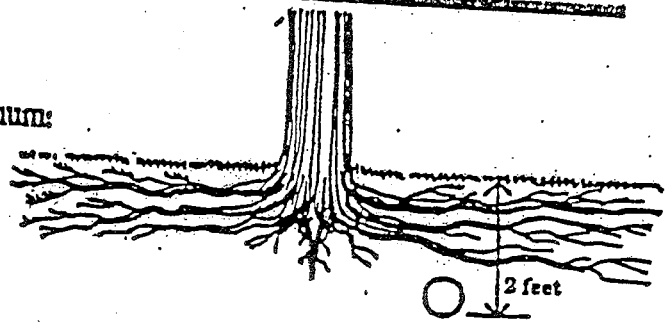



Trenching near a tree can kill as much as 40% - 50% of its roots, almost certainly leading to poor health, windthrow or outright death of the tree.

A tunnel in the same place will do virtually no damage to the tree.

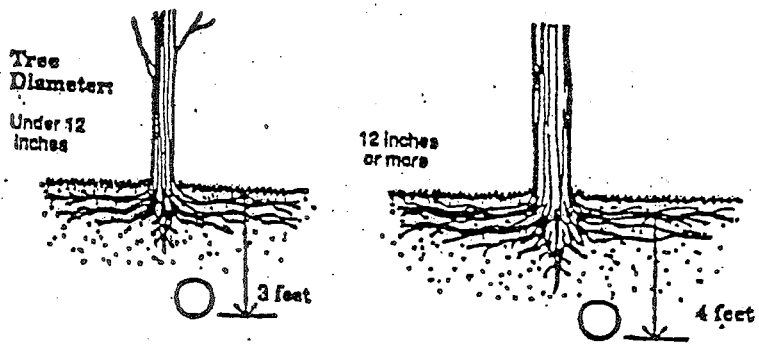
## How Deep Should a Tunnel Be?

Minimum:




Since most roots live in the top 18" of soil, a tunnel 24" deep will usually do little damage. However, root patterns vary depending on species and size of tree, and the kind of soil. If it is apparent from trenching that roots are deeper than expected, boring should also be deeper.

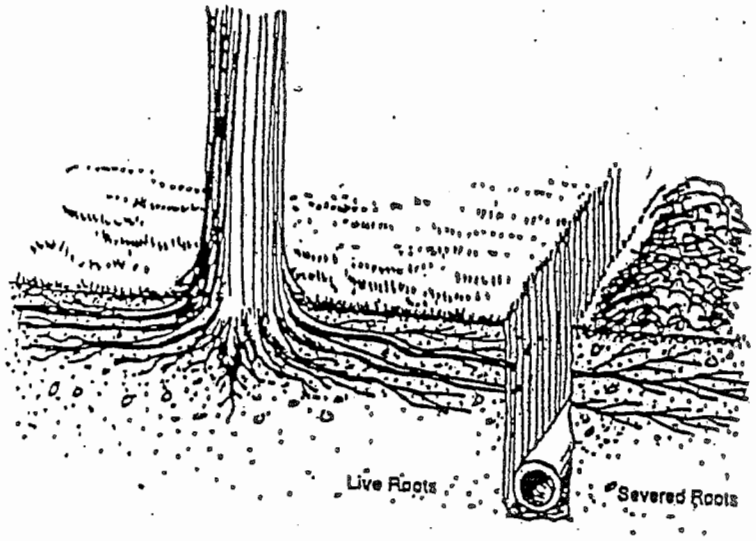
Recommended:



## Store Soil Opposite the Tree Side of a Ditch

Reasons:

- Shovels or backhoes removing stored soil can cut into the surface and destroy absorbing roots, adding more injury to the tree.
- If even an inch of soil is left after backfilling or hauling away soil, it can cut off vital oxygen.




Pile excavated soil on the side of the trench opposite the tree. If this is not possible, place the soil on a plastic tarp, plywood or a thick bed of mulch.

## Backfill Quickly and Cleanly—Then Water

- In trenches where roots have been cut, backfill as soon as possible or keep all root ends moist with wet burlap, peat moss or similar material.

  **Reason:** *Dried roots are dead roots.* In warm, dry weather, small roots can die in 10 or 15 minutes. Large, woody roots should never be exposed for more than an hour. Wind makes conditions even worse!

- Do not dispose of cable scraps, oil cans, wood scraps, machine fluids, paint, left over concrete or other debris in the backfill. *Keep it clean!*

  **Reason:** Foreign objects take up valuable growing space and can introduce chemicals that kill roots.

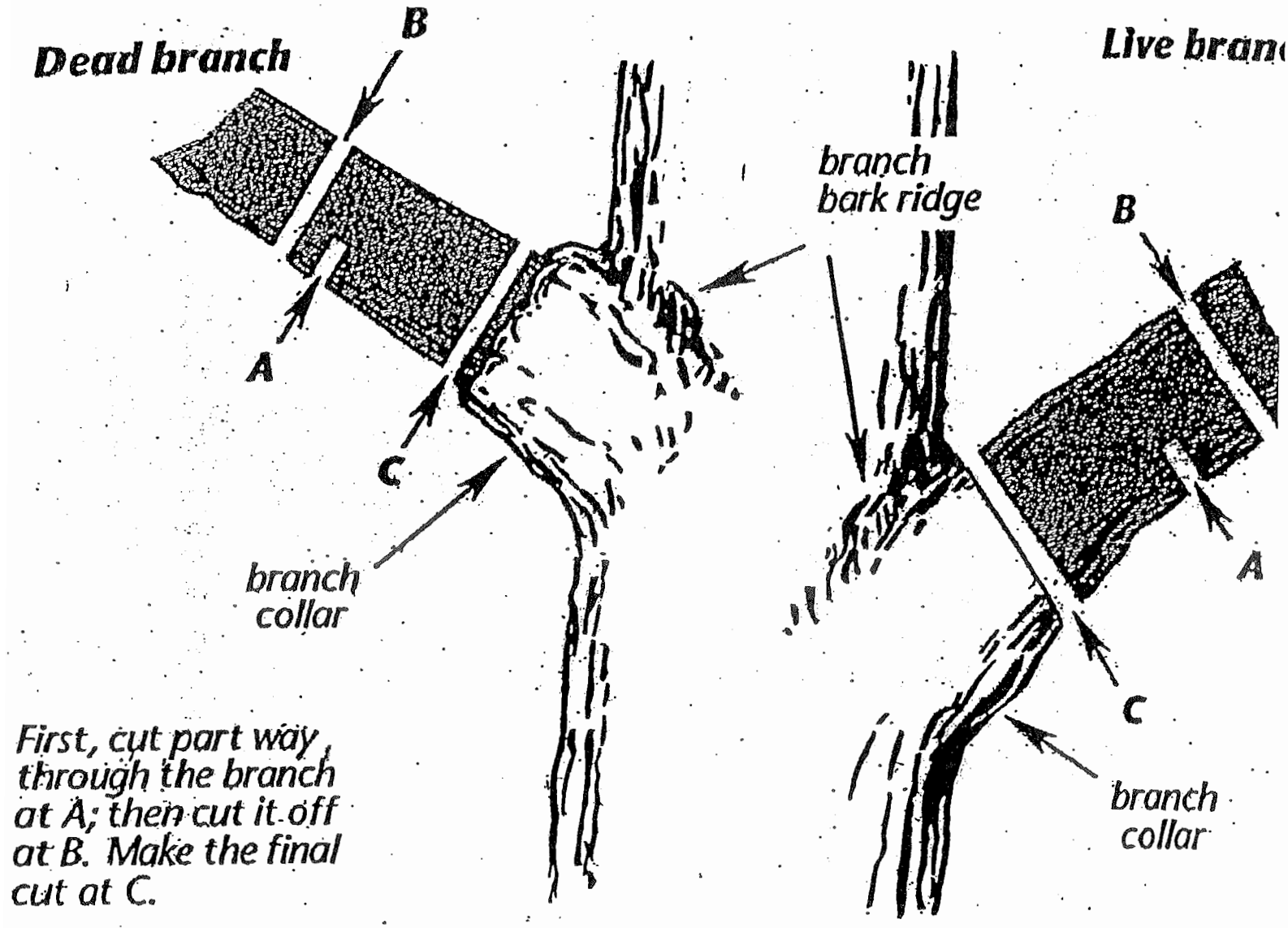
- Compact the backfill to original firmness, *but no more.*

  **Reason:** Too much compaction removes pores and will prevent or slow root growth.

- Water the backfill.

  **Reason:** This will *keep roots moist* and remove large air pockets that might retard growth of new roots.

# Proper Pruning




*First, cut part way through the branch at A; then cut it off at B. Make the final cut at C.*

# TREE PRESERVATION AREA

# KEEP OUT

## DO NOT ENTER OR MOVE FENCES WITHOUT PERMISSION OF:

**Takoma Park City Arborist**

**301.891.7612**



## PENALTY FOR VIOLATIONS STRICTLY ENFORCED